

Digital Fossil-Mining and Evolution of Squids

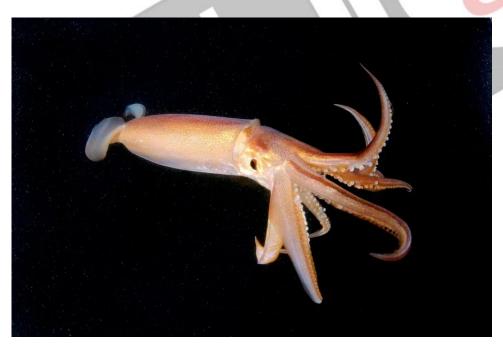
Source: TH

Using digital fossil-mining techniques, scientists have uncovered that <u>squids</u> dominated ancient oceans 30 million years earlier than previously believed, shedding new light on their deep evolutionary history.

- Researchers digitally identified at least 40 species from two modern squid groups—Oegopsida (deep-sea squids) and Myopsida (coastal squids)—in 110-70 million-year-old Cretaceous concretions found in Japan.
- Digital fossil-mining involves using technologies like 3D scanning, CT imaging, AI, and
 GIS to extract and analyze fossil data without damaging original fossils.

Squids

- About: Squids, belonging to the <u>Cephalopod class</u> (with octopuses and cuttlefish), have a **soft** mantle, an internal shell (gladius), a parrot-like beak, two tentacles for capturing prey, and eight arms for holding it.
 - Like all cephalopods, they have **three hearts** and use **jet propulsion** for movement.



- Habitat Diversity: Squids are found worldwide, from shallow coasts to 3 miles deep, and range
 in size from tiny pygmy squids to giant squids with the largest eyes in the animal kingdom
 (volleyball-sized).
- Behavior and Intelligence: Squids are among the most intelligent invertebrates, using chromatophores for camouflage, communication, and predator evasion.
 - They can ink-spray, and detach arm-tips for distraction, and show social behaviors like cooperative hunting (Humboldt squid) and mate guarding.

- Technological Contributions: They inspired color-changing materials, eco-friendly self-healing packaging, and bio-inspired robotics.
- Uniqueness: Some squids can "fly" by gliding up to 164 feet, show parental care (e.g., bigfin reef squid), and mimic prey to lure food.

Read More: Conservation of Cephalopods

PDF Refernece URL: https://www.drishtiias.com/printpdf/digital-fossil-mining-and-evolution-of-squids

